



## A STUDY OF LIVELIHOOD AND INCOME SOURCES OF TRIBAL FARMERS OF HAZARIBAG DISTRICT OF JHARKHAND STATE AND REACH & PENETRATION OF MODERN TECHNOLOGIES AND INSTITUTIONS AMONG THEM: A CASE STUDY OF DUMAR VILLAGE

Pankaj Kumar Barnwal<sup>1</sup>, Dr. Ifsha Khurshid<sup>2</sup>

<sup>1</sup> Research Scholar (JRF), University Department of Economics, Vinoba Bhave University, Hazaribagh

<sup>2</sup> Assistant Professor, University Department of Economics, Vinoba Bhave University, Hazaribagh

### ABSTRACT

Various revolutions (Green revolution, white revolution, yellow revolution etc.) in agriculture and allied sectors have transformed food security situations in India. Productivity of agricultural products have been increased manyfold. Revolutionary techniques of farming, animal husbandry and non-timber forest produce (NTFP) collection have increased production of various primary goods, improves life standard and income of millions of farmers residing in various part of the country. It is important to know whether the revolutions and technological changes in the country's agriculture and allied sectors are inclusive or not. This study has been conducted in a tribal village of Hazaribagh district of Jharkhand. In this study an attempt was made to understand the livelihood and sources of income of tribal farmers. Other purpose of this study is to know to what extent modern technology and institutions have affected their production methods and livelihood. Modern technology made their presence in their farming methods, high yielding variety seeds and chemical fertilizers are in common use. They consume most of their production. They have almost no surplus production to sell in the market. The size of agricultural holdings is very small and all of them are marginal farmers. They regularly collect firewood as well as various forest products from the forests. They don't take loans from institutional sources. Loans from non-institutional sources are very expensive. They find it difficult to get credit from institutional sources, their farms and livestock are not insured. Various welfare and farmer centric schemes are not inclusive to tribal farmers in studied village. Adequate training should be given to local government officials. Strong and multipurpose co-operative society should be created at village level which should capable to connect tribal farmers to government schemes and act as light bearer for modernization of agriculture, animal husbandry and forestry activities and also provide financial services to these farmers at low cost.

**KEYWORDS:** Tribal Farmers, Income, Modern Institution, Farm, Forest

### 1. INTRODUCTION

With the increasing prevalence of scientific and modern agricultural techniques in different parts of the India, the productivity of various crops has increased manifold and farmers income and standard of living has also improved. In such a situation, it is important to know to what extent these high-productivity modern agricultural techniques have reached among tribal farmers. So, this study has been conducted in a tribal village of Hazaribagh district of Jharkhand, India, to understand livelihood situation of tribal farmers and to examine the reach and penetration of modern technology and institution among tribal farmers. This study has been conducted in a tribal village (Dumar) which is located in Churchu block of Hazaribagh district of Jharkhand.

Jharkhand, located in eastern India, is a state rich in natural resources and cultural heritage. It boasts of lush forests, rolling hills, and diverse wildlife. With 40% of India's mineral reserves, it's a hub for mining and industry. Tribal communities, comprising 26% of the population, add to its vibrant culture, festivals, and traditional crafts, making Jharkhand a unique blend of nature, industry, and indigenous heritage. It spreads over an area of 79714 sq. km of which 18423 sq. km is forest land (India,2024). It has a population of 3,29,88,134 and scheduled tribes constitute 26.21% of total population. According to 2011 Census, Jharkhand has a total of 32 recognized scheduled tribes.

### 2. OBJECTIVES OF THE STUDY

1. To study the livelihood and sources income of tribal farmers of Dumar village.
2. To examine the reach and penetration of modern institution and technology among tribal farmers of Dumar village.

### 3. METHODOLOGY ADOPTED FOR STUDY

This study has been conducted in a tribal village (Dumar) comes under Churchu Block. It is located 35 KM towards East from District headquarters Hazaribagh, Jharkhand. Dumar is a medium size village located in Churchu Block of Hazaribagh District, Jharkhand with total 93 families residing (Census, 2011). In Dumar village Schedule Tribe constitute 73.67% while Schedule Caste were 26.33 of total population which was 433. A total of 68 tribal families are settled this village out of which seven families have been taken as samples for the study. Observation, interview and schedule method is used for data collection. Collected data is analysed under various themes and sub themes by the researcher.



## 4. RESULT AND DISCUSSION

### 4.1 Farming for Livelihood

All selected tribal farmers taken as sample can be categorised as marginal farmers. Their landholding ranges from 0.4 acre to 1.5 acre. All farmers accepted that their core purpose of production is to fulfil their consumption need. All selected farmers said that farming and animal husbandry are their primary occupation and they produce only for their domestic consumption. 5 out of 7 said, they rarely sell their produce in market. All farmers regularly visit forest to collect various forest products.



### 4.2 Production List

Farm produce	Paddy, wheat, maize, coarse grain, potato, onion, variety of vegetables (greenstuff, potato, onion, tomato, jackfruit...), variety of fruits (mango, guava, Papaya, custard apple...) etc.
Livestock	Poultry, goat, pigeon, etc.
Forest produce	Wild mushroom, fruits (kendo, piar..), fuelwood, medicinal utility (chirauta, putush...), mahua flower, etc.

Source: Primary data collected by the researcher

As per information given by tribal farmers, they produce, collect items only for their own consumption. They rarely sell their produce in market. All farmers reserve a part of their landholding for vegetable cultivation which has irrigation facility, in which vegetables are grown throughout the year. Various types of fruit trees have been grown in the edge of their farmland. Tribal farmers regularly visit forest around them and collects useful products there. They use fuelwood for cooking so they regularly take fuelwood from their and also, they collect

various forest sub products which are seasonably available such as mahua, wild fruits, various types of mushrooms.

### 4.3 Input use and Modernization

Modern technologies and scientific methods of farming play's crucial role in improving agricultural productivity. It also improves resource use efficiency of water, soil, fertilizers, labour and other inputs. This research work examined the extent to which modern technologies and institutions have reached to tribal farmers.

- Machines and tools used in agriculture:** All sample farmers say they have small landholdings so they can't afford to keep bullocks for ploughing operation permanently. Whenever the fields need to be ploughed either they hire tractor or ask other farmer to plough the field with bullocks. They also use various traditional tools like spade, hoe etc. for various operations in their field.
- Source of seeds used as input:** All tribal farmers are aware of high yielding and disease and pest resistance features of hybrid seeds so all the farmers purchase high quality hybrid seeds from the nearest seed stores to sow in their fields.
- Irrigation facility:** The main cultivated crop is paddy which, didn't need irrigation in a normal monsoon situation. If monsoon fails, irrigation becomes necessity. In seven sample tribal farmer only one has pump sets through which he serves irrigation facility to other farmers in the village, if asked for. Bucket irrigation technique is used by them to irrigate their very small vegetable producing farms.

**Note:** In bucket irrigation, water is manually carried or lifted from a source (e.g., well, river, or pond) and poured into the crops. This is a labour-intensive irrigation method.

- Banking facility and its use by tribal farmers:** In all the sampled tribal farmer families, there was there at least one family member who had a bank account but they find it very difficult to get a loan from the bank. They created their own system for fulfilling their credit needs which they call Samaj. In Samaj, all members deposit some amount (200, 500,1000) periodically (weekly, monthly). The member who needs money will have to bid for the accumulated deposit. Tribal farmers are unaware of any Kisan Credit Card facility, they take loans from informal sources in severe situations at very high interest rate (which may be up to 10% per month).
- Crop Insurance and Tribal Farmers:** Tribal farmers of this village are unaware of any insurance service in case of crop failure, so their crops are uninsured, but they seek government support in case of crop failure.

### 4.4 Livestock as profitable economic activity with near zero cost:

Sampled farmers have no cattle ownership but they all are engaged in rearing of goat, poultry, and pigeon. They do not have to bear any extra monetary cost to purchase forage and fodder for their goats, Chickens and pigeons. Chickens and pigeons find theirs forage in surrounding farms and environment, tribal farmers only provide accommodation and

care to them. Grazing lands around them feed their goats. farm weed and vegetable waste of their kitchen is used to feed goats. They sell their livestock in nearer market when demand is available in the market

#### **4.5 Inclusiveness of other government schemes:**

1. **Pradhan Mantri Kisan Samman Nidhi:** Under this scheme Government of India transfers 6000 rupees per year in three equal instalments through direct benefit transfer to small and marginal farmers (landholding up to 2 hectare) as income support. Only 4 out of 7 sampled tribal farmers are getting these transfers. So, efforts should be made by local government so that all farmers can avail the transfer income support.
2. **Soil health card:** This scheme was launched in 2015, aims to promote sustainable soil management practices. Under the scheme soil samples are collected and tested, and farmers receive a Soil Health Card with recommendations to improve soil fertility and productivity. No tribal farmers is aware of this scheme in studied village.



These livestock are an important part of their wealth which they can sell in times of distress.

#### **4.6 Dependency of tribal farmers on forest:**

Nearer forest supports life of tribal farmers of this village. All tribal farmers and their family regularly visit forest to collect fuelwood and other NTFP (Non timber forest produce), which includes variety of products like, various types of wild fruits (Kendu, Piar, Mahua flower, Custard apple etc.), traditional medicine (Chirouta, Putush, Sakhua and nim stem for toothbrush etc.) Various types of wild mushrooms which are available only in rainy season.

#### **4.7 Source of Income of Tribal Farmers:**

Tribal farmers doesn't own any type of business or micro enterprise other than agriculture, animal husbandry and forestry. They work in nearer villages around them as construction labourer, agricultural labourer, brick kiln labourer. They also find job through MGNREGA. Wage rate in agriculture ranges from 200- 250 Rupees and in Non-Agriculture sector it ranges from 350-400 Rupees per day. Agriculture, animal husbandry and forestry make very small contribution in their monetary income because of lack of surplus to sell in the market. Many young literate/educated male labourers of this village migrates to urban regions in various part of country for earning higher wage (The lack of well-paid employment throughout the year

in this village acts as push factor of labour migration to urban area).

#### **5. CONCLUSION AND SUGGESTIONS**

From the above study it is evident that with the increasing access of modern agriculture machineries to the tribal farmers of Doomar village farming is taking place due to which farming is no longer so labour intensive and thus their time is saved and they are able to earn by working in cities and nearby villages. Using chemical fertilizers in the fields is also common among them but they use it without checking the soil. Along with growing rice, wheat, maize and various vegetables and fruits in their fields, they are also rearing goats, chickens and pigeons. They consume most of their production. They have almost no surplus production to sell in the market. The size of agricultural holdings is very small and all of them are marginal farmers. They regularly collect firewood as well as various forest products from the forests. They are unable to get loans from institutional sources. Loans from non-institutional sources are very expensive and there is no insurance for the crops grown in their fields. All the farmers are not getting the income support from PM Kisan Samman Nidhi even though they are the most deserving for it. Hence there is a need to promote the formation of strong multipurpose cooperative societies in the tribal villages which would be able to link these tribal farmers with all the welfare and other agricultural schemes of the government and provide them various financial services.

Modern techniques can improve their farm productivity so that marketable surplus can be generated in agriculture, livestock sector and forestry. Skill development programs focusing on modern farming, livestock management, and agro-based industries can enhance productivity. Implementing renewable energy solutions such as solar panels and biogas plants can provide sustainable energy for irrigation and for other use Leveraging information and communication technology (ICT) tools for real-time market prices, weather forecasts, and agricultural advice ensures informed decision-making. Facilitating access to microfinance and credit can help farmers invest in improved equipment, seeds, and technology. Encouraging women's participation and entrepreneurship in agribusiness can boost overall economic development. With these integrated efforts, Dumar village can become a model of sustainable agricultural development, improving the overall quality of life for its residents and ensuring a stable and prosperous future for the farming community. In India, the central and state governments are running various schemes and programs to increase the income of farmers. Local governance should be strengthened so that it can be able to connect all tribal farmers from these schemes.

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